

Real Name - Nickname

Write a program that reads a list of real names and nicknames. (Assume that the input do not contain any duplicate real names and nicknames.) Then accept a list of strings. If it is a real name, return the corresponding nickname. If it is a nickname, return the corresponding real name. If it is not found on either list, return the string “Not found”.

Input

The first line is an integer N.

The next N lines, each contains real name and nick name, separated by space.

Line N+2 is an integer M.

The next M lines are a list of names. A real name input is asking for the nickname, and a nickname input is asking for the real name.

Output

M lines, displaying the nickname or real name that corresponds to the name given as input, one name per line. If the name is not in any lists at all, return the string “Not found”.

Example

Input (from keyboard)	Output (on screen)
10 Robert Dick William Bill James Jim John Jack Margaret Peggy Edward Ed Sarah Sally Andrew Andy Anthony Tony Deborah Debbie 4 John Jim Don Debbie	Jack James Not found Deborah